

Appln No. 10/037,814

Amdt date September 3, 2004

Reply to Office action of March 5, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Cancel Claims 5, 23, 24, 26 and 28, amend Claims 1, 4, 6, 7, 8, 9, 19 and 22, and add Claims 29-31 as follows:

1. (Currently Amended) An electrical current carrying conductor for long distance transmission of electrical current, said current carrying conductor comprising:

- a) a relatively solid high tensile strength central load carrying core ~~formed of a fiber containing reinforced composite material~~ formed ~~[[of]]~~ from a plurality of generally cylindrically arranged component core members which abut together and which are each ~~somehat~~ generally polygonally shaped in cross-section and when abutted ~~[[form]]~~ together define a generally solid cylindrically shaped core capable of being wound about a spool, each core member formed from a fiber reinforced composite material, said core being of sufficient cross-sectional size to support the ~~[[high]]~~ tensile loading on the conductor ~~and having a tensile strength sufficiently high to carry the entire loading carried by a steel core in a conventional cable when the conductor is suspended between support towers, wherein said conductor is capable of being wound around a drum; and~~

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- b) an outer highly conductive electrical current carrying sheath completely surrounding said load carrying core for carrying electrical current over said ~~[[long]]~~ distance ~~and where said sheath carries only a small amount to tensile loading on the conductor.~~

2. (Previously Presented) The electrical current carrying conductor of Claim 1 further characterized in that said outer sheath is comprised of aluminum which is not alloyed to provide load carrying capacity.

3. (Original) The electrical current carrying conductor of Claim 1 further characterized in that said reinforced composite material is comprised of a plurality of aligned reinforcing fibers embedded in a thermoplastic composite matrix.

4. (Currently Amended) The electrical current carrying conductor of Claim 1 further characterized in that said ~~central~~ ~~load carrying core is comprised of a plurality of individual~~ sections which are capable of being separated from one another for purposes of splicing.

5. (Canceled)

6. (Currently Amended) The electrical current carrying conductor of Claim ~~[[5]]~~ 1 further characterized in that said individual sections are ~~somewhat trapezoidal shaped and when~~

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~~abutted against one another form a central bore sized to receive a fiber optic cable~~ generally triangular in cross-section.

7. (Currently Amended) A method of producing a long distance transmission current carrying conductor, said method comprising:

- a) bringing a plurality of individual reinforced ~~plastic~~ composite core sections together in abutting relationship to form a generally cylindrically shaped conductor solid core, each core section having a generally polygonally shaped cross-section, wherein said and which core sections are somewhat polygonally shaped in cross section and are abutted together to form a cylindrically shaped core, each core being of sufficient cross-sectional size to support the primary tensile loading on the conductor and having a sufficiently high tensile strength to carry the entire loading carried by a steel core in a conventional cable when the conductor is suspended between support towers; and
- b) locating on an outer cylindrically shaped surface of said core an outer highly conductive electrical current carrying conductor.

8. (Currently Amended) The method for producing a long distance transmission current carrying conductor of Claim 7 further characterized in that said ~~step of~~ locating the current carrying conductor comprises winding individual wires of a

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highly conductive current carrying conductor about the central core.

9. (Currently Amended) The method for producing a long distance transmission current carrying ~~cable~~ conductor of Claim 8 further characterized in that said method comprises helically winding said wires about said central core.

10. (Previously Presented) The method for producing a long distance transmission current carrying conductor of Claim 7 further characterized in that said outer surface is comprised of aluminum wires.

11. (Previously Presented) The method for producing a long distance transmission current carrying cable of Claim 7 further characterized in that said reinforced plastic composite sections are each comprised of a plurality of aligned reinforcing fibers embedded in a thermoplastic composite matrix.

12. (Previously Presented) The method for producing a long distance transmission current carrying conductor of Claim 7 further characterized in that said method comprises the bringing of the composite sections together about a fiber optic cable so that the current carrying conductor also includes a fiber optic cable extending through said core.

13. - 18. (Canceled)

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19. (Currently Amended) An electrical current carrying conductor for long distance transmission of electrical current, said current carrying conductor comprising:

- a) a relatively solid high strength central load carrying core ~~formed of a fiber containing reinforced composite material~~ formed of from a plurality of generally cylindrically arranged component core members which abut together and which are each ~~somewhat~~ generally polygonally shaped in cross-section ~~[[and]]~~ such that when abutted form a generally cylindrically shaped core, each member being formed of a fiber reinforced composite material capable of being wound about a ~~spool,~~ said core being of sufficient cross-sectional size to support the ~~primary~~ tensile loading on the conductor when the conductor is suspended between support towers, and wherein the conductor is capable of being wound around a drum;
- b) an outer highly conductive electrical current carrying sheath completely surrounding said load carrying core for carrying electrical current over said ~~[[long]]~~ distance ~~and where said sheath carries only a small amount of tensile loading on the conductor;~~
- c) a central bore extending axially through said core;
and
- d) a fiber optic cable extending through the central bore allowing the conductor to carry electrical current and fiber optic cable signals with the same conductor,

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wherein the abutting component core members and the
fiber optic cable define a cylindrical solid core.

20. (Previously Presented) The electrical current carrying conductor of Claim 19 further characterized in that said outer sheath is comprised of aluminum which is not alloyed to provide load carrying capacity.

21. (Previously Presented) The electrical current carrying conductor of Claim 20 further characterized in that said reinforced composite material is comprised of a plurality of aligned reinforcing fibers embedded in a thermoplastic composite matrix.

22. (Currently Amended) The electrical current carrying conductor of Claim 19 further characterized in that said central core members ~~load-carrying core is comprised of a plurality of individual sections which~~ are capable of being separated from one another for purposes of splicing.

23. (Canceled)

24. (Canceled)

25. (Previously Presented) The electrical current carrying conductor for long distance transmission of electrical current of Claim 2 further characterized in that said electrical current carrying sheath is formed of a non-alloyed aluminum.

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26. (Canceled)

27. (Previously Presented) The electrical current carrying conductor for long distance transmission of electrical current of Claim 20 further characterized in that said electrical current carrying sheath is formed of a non-alloyed aluminum.

28. (Canceled)

29. (New) The electrical current carrying conductor of Claim 1, wherein the plurality of component core members allow for the winding of the conductor around the drum.

30. (New) The method for producing a long distance transmission of current carrying conductor of Claim 7 further comprising winding the conductor around a drum.

31. (New) The electrical current carrying conductor of Claim 19, wherein the plurality of component core members allow for the winding of the conductor around the drum.